

## South Fork Tributary Habitat Enhancement Project Description

Despite its high habitat and water quality, the fishery of the Salmon River is a remnant of what it once was. Wild runs of Coho salmon still persist in the relatively unimpaired waters of the Salmon, yet they face a high risk of extinction. The Final SONCC Coho Recovery Plan states that summertime temperatures and lack of winter rearing habitat are the greatest stressors for juvenile Coho in the Salmon River, and identifies this project as a high priority. An assessment completed by the Salmon River Restoration Council (SRRC) on large woody debris in Knownothing and Methodist creeks showed an overall lack of large in-stream structures.

Coho life histories are comprised of a chain of habitats with a favorable spatial/temporal distribution. In the Salmon River the linkages between these habitats have largely been broken. Due to a combination of factors, including simplification and fragmentation of habitat, Coho populations are declining. According to the SONCC Coho Recovery Plan the highest priority for Coho salmon recovery in the Salmon River should be improving the quality and extent of rearing habitat and refugia. For summertime rearing, reducing water temperatures in the basin, along with protecting and restoring thermal refugia will be the top priority. For winter rearing, improving connectivity to existing off-channel habitat, and increasing the extent and quality of winter rearing areas will be essential. This habitat, located primarily in lower tributary reaches, should be restored or recreated wherever possible, to provide increased opportunities for winter rearing in the basin. The habitat enhancement actions proposed in this project are expected to have beneficial impacts to all salmonids on the Salmon River.

### Management Direction

The 1995 Klamath National Forest Land and Resource Management Plan (Forest Plan, as amended; Klamath National Forest 1995) includes Standards and Guidelines from the Northwest Forest Plan. The Forest Plan provides forest-wide and management area (MA) direction for project-level activities. The South Fork Tributary Habitat Enhancement Project is mostly within the Riparian Reserve MA (MA-10), specific direction for the Riparian Reserve MA can be found on pages 4-126 to 4-127 in the Forest Plan. Additionally there are three proposed sites within Special Habitat (MA-5) pages 4-82 to 4-94 in the Forest Plan. Enhancing these streams would meet Forest Plan Aquatic Conservation Strategy Objectives by providing optimal in-stream flow for spatial and temporal connectivity for aquatic organisms.

The IDT designed the South Fork Tributary Habitat Enhancement Project to be consistent with all applicable law, regulation, policy, and direction.

### Purpose and Need for Action

The purpose of this project is to:

- Enhance/entrain spawning gravels,

- Increase over-summer rearing habitat through pool development,
- Increase over-winter rearing by providing velocity refugia, and
- Provide for a wide range of habitat heterogeneity for juvenile and adult salmonids.

Efforts to improve riparian habitat condition will be important longer-term actions in the recovery strategy for all salmonid species. Prior to implementation of the Northwest Forest Plan, timber harvest extended into the riparian zone in many areas of the watershed. The most significant outcomes of these logging activities have been the associated changes in the natural fire regime, the substantial building of road networks throughout the basin, and loss of large diameter wood structures in streams. One of the best ways to increase the extent of rearing habitat is through placement and recruitment of large woody debris or other in-stream structures. This project would restore large woody debris, creating habitat features necessary for salmonid recovery in the Salmon River.

The enhanced channel complexity will increase pool and slow water habitat, decreasing stream velocity, and increasing the water table, which will also improve riparian vegetation and shade. Groundwater retention within the floodplain will be improved, increasing the amount and residence time of hyporheic flow (groundwater/surface water interaction). This has a beneficial indirect effect on water temperature by maintaining hyporheic flow longer into the water year, improving refugia conditions in stream, and providing cool water inputs to the South Fork Salmon River during critical summer months.

## Proposed Action

The Salmon River Restoration Council in coordination with the Forest Service proposes to construct 23 instream salmonid habitat enhancement structures within 20 sites in Methodist and Knownothing Creeks over 3.15 miles of stream (1.42 miles and 1.73 miles respectively) see Figures 1 and 2 below for a map of the proposed structure locations. The structures will be built in compliance with Chapter VII of the California Department of Fish and Wildlife (CDFW) Habitat Restoration Manual and through the guidance of the CDFW grant manager. Structures will be placed with the use of an excavator and skidder with the guidance of an experienced restoration practitioner conducting the project oversight (Pacific Watershed Associates Project Scientist). This project proposes to purchase whole tree material (trees with root wads intact) from existing Forest Service projects. The features will be anchored according to the guidance of the CDFW grant manager and Chapter VII of the CDFW Habitat Restoration Manual. The use of threaded bar and/or other stable anchoring techniques will be employed to comply with CDFW standards.

The effectiveness of the proposed instream habitat restoration component of the project will be evaluated and quantified by conducting a monitoring study aimed at measuring the response of key in-stream habitat characteristics to wood loading. This proposed monitoring study will incorporate several field-tested and widely applied monitoring protocols targeted at answering questions about the effectiveness of wood loading efforts and to what extent we are meeting

stated implementation project objectives at both feature-specific and treated reach scales. This monitoring study will be conducted in conjunction with proposed instream wood loading in Methodist and Knownothing Creeks.

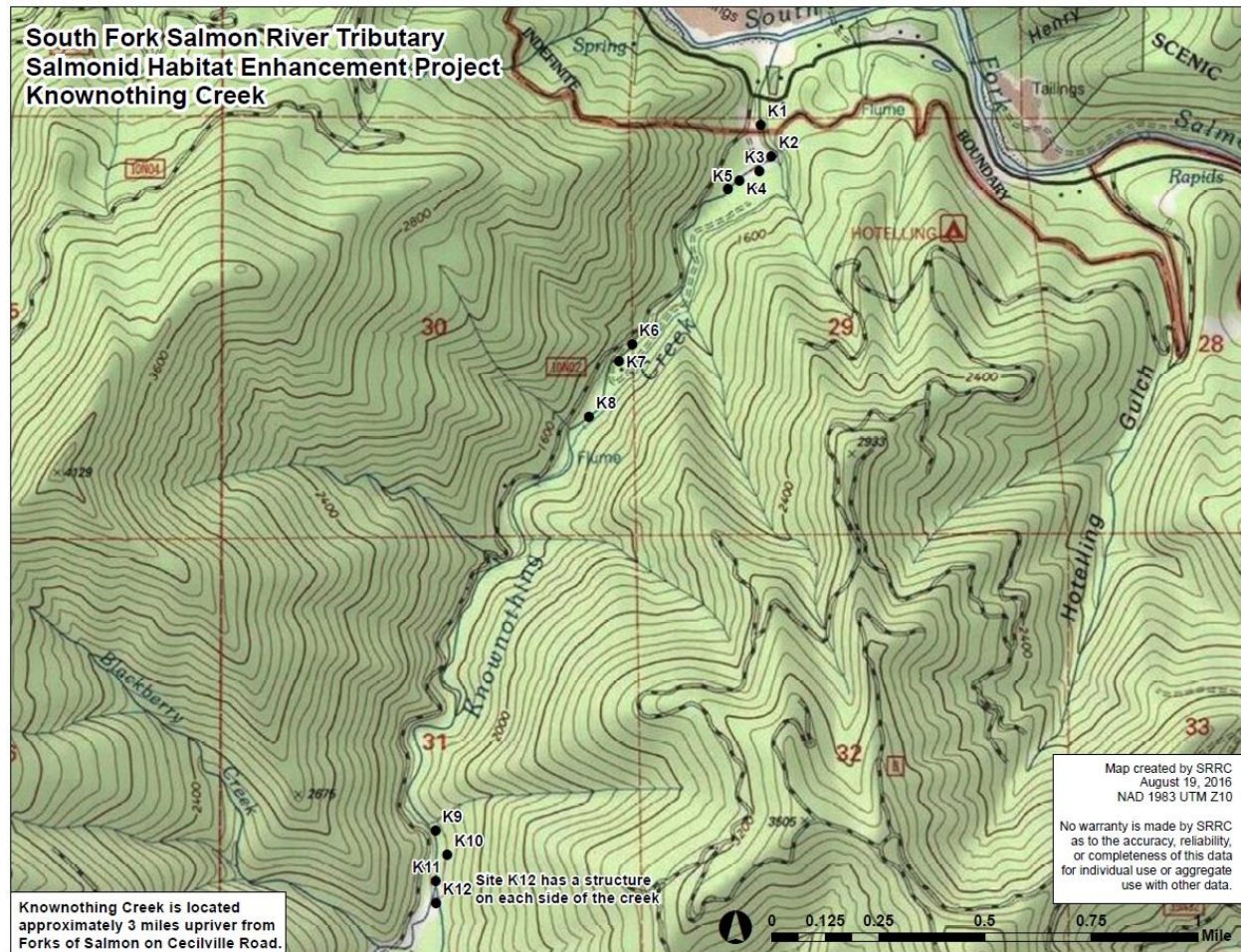


Figure 1. Knownothing Creek

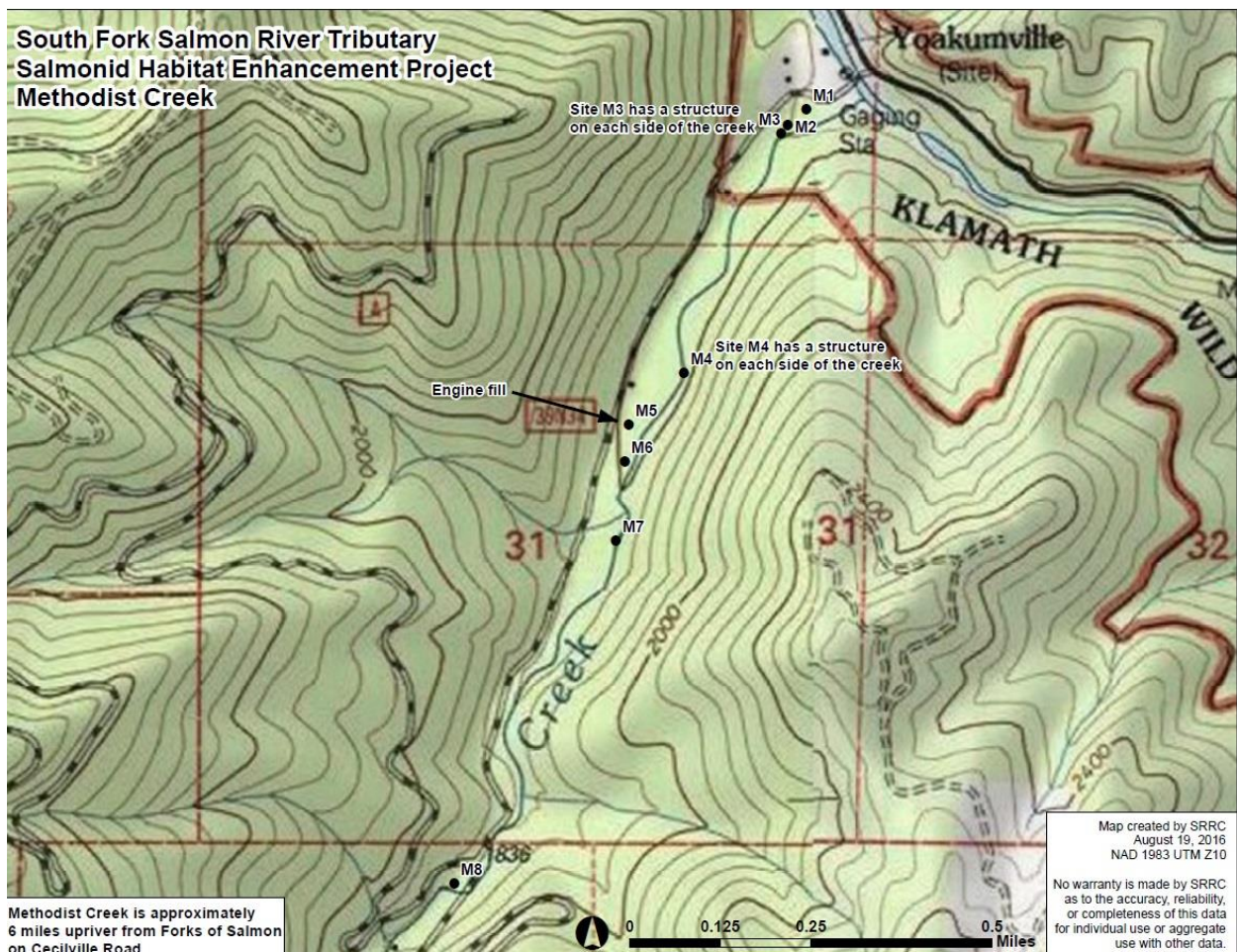


Figure 2. Methodist Creek